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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/670,536	09/27/2000	Naoki Kuwata	4468-007	6773

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EXAMINER

VILLECCO, JOHN M

ART UNIT	PAPER NUMBER
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2612

DATE MAILED: 11/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/670,536	Applicant(s) KUWATA ET AL.	
	Examiner John M. Villecco	Art Unit 2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3 is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 4-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 June 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>7/23/04</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION II

Response to Arguments

1. Applicant's arguments filed August 4, 2004 have been fully considered but they are not persuasive.
2. Regarding claims 1, 7, 8, and 9, applicant has amended the claims to include the limitation of summing up with respect to a fixed color pixel on the basis of substantially all said color image data. This added limitation does not appear to overcome the Takiguchi reference. Applicant argues that Takiguchi only determines correction values based only on a fraction of the image. It is assumed that the applicant is referring to column 2, lines 41-44, in making this conclusion. However, Takiguchi does disclose that all of the pixel data of an obtained image is evaluated in order to determine how many pixels fall within the designated color range. In other words, all of the image data is evaluated to determine if it should be added to the designated pixel color region. Therefore, based upon all of said color data, the first skin color count unit (2) of Takiguchi does carry out summing up with respect to a fixed color pixel.
3. Additionally, applicant has added additional claims 10-20. Please see the discussion of newly added claims in the upcoming pages.

Drawings

4. The drawings were received on June 30, 2004. These drawings are accepted.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. **Claims 1, 2, 4, and 7-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Takiguchi (U.S. Patent No. 5,130,935).**

7. Regarding *claim 1*, Takiguchi discloses first (2) and second (3) skin color counting units for summing the number of pixels of a specific color within a certain range, a correction quantity operation unit (6) for obtaining a color adjustment amount for canceling a difference between an optimum value and the result of summing up (col. 2, lines 47-52), and a color correction unit (7) for correcting the color image data. Additionally, Takiguchi discloses applying a weighting factor to certain areas within an image to achieve smoothness (col. 6, lines 41-65 and col. 7, lines 42-51). The weighting factor and the correction factor are used to generate the correct color. Takiguchi discloses that all of the pixel data of an obtained image is evaluated in order to determine how many pixels fall within the designated color range. In other words, all of the image data is evaluated to determine if it should be added to the designated pixel color region. Therefore, based upon all of said color data, the first skin color count unit (2) of Takiguchi does carry out summing up with respect to a fixed color pixel.

8. As for *claim 2*, the first (2) and second (3) skin color counting units sums the number of pixels within a certain hue range value (col. 2, lines 47-52).

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9. With regard to **claim 4**, the first (2) and second (3) skin color counting units sums the number of pixels within a certain hue range value (col. 2, lines 47-52). Inherently the parameters of the u^*-v^* chromaticity diagram would have to be stored in memory in order to determine perform the operations.

10. **Claim 7** is considered a method claim corresponding to claim 1. Please see the discussion of claim 1 above.

11. **Claim 8** is considered a computer program claim corresponding to claim 1. As shown in Figure 4, the apparatus includes a CPU (40), ROM (41), and RAM (42) which inherently are operated using computer programming codes. Please see the discussion of claim 1 above.

12. **Claim 9** is considered substantively equivalent to claim 1. Please see the discussion of claim 1 above.

13. With regard to **claim 10**, Takiguchi does disclose that all of the pixel data of an obtained image is evaluated in order to determine how many pixels fall within the designated color range. In other words, all of the image data is evaluated to determine if it should be added to the designated pixel color region. Therefore, based upon all of said color data, the first skin color count unit (2) of Takiguchi does carry out summing up with respect to a fixed color pixel.

14. **Claim 11** is considered substantively equivalent to claim 10. Please see the discussion of claim 10 above.

15. **Claim 12** is considered substantively equivalent to claim 10. Please see the discussion of claim 10 above.

16. **Claim 13** is considered substantively equivalent to claim 10. Please see the discussion of claim 10 above.

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

18. **Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takiguchi (U.S. Patent No. 5,130,935) in view of Maltz (U.S. Patent No. 5,307,182).**

19. As mentioned above in the discussion of claim 1, Takiguchi discloses all of the limitations of the parent claim. However, Takiguchi fails to explicitly state that an average value for every elemental color is computed. Maltz, on the other hand, discloses that it is well known in the art to compute an average value for every elemental color to produce a color adjustment amount. As disclosed in column 9, lines 25-59, Maltz discloses determining the average of each elemental color mapping each of those colors to a target value. The target value is interpreted to be the optimum value. The histogram approach is used to minimize the breakup of the image. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the histogram approach so that a high quality image is formed.

20. **Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takiguchi (U.S. Patent No. 5,130,935) in view of Inoue (U.S. Patent No. 6,097,836).**

21. As mentioned above in the discussion of claim 1, Takiguchi discloses all of the limitations of the parent claim. However, Takiguchi fails to specifically disclose correcting a

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tone curve to perform the color correction. Inoue on the other hand discloses adjusting a tone curve based on input parameters to effect color correction for each one of the R, G, B, components. See column 10, line 6 to column 12, line 67. By initially setting up and changing a tone curve correction can be performed for a specific color at a high quality level (col. 13, lines 18-39). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to perform the color correction of Takiguchi by adjusting a tone curve.

22. Claims 14, 15, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takiguchi (U.S. Patent No. 5,130,935) in view of Inoue (U.S. Patent No. 6,229,580).

23. Regarding *claim 14*, Takiguchi discloses first (2) and second (3) skin color counting units for summing the number of pixels of a specific color within a certain range, a correction quantity operation unit (6) for obtaining a color adjustment amount for canceling a difference between an optimum value and the result of summing up (col. 2, lines 47-52), and a color correction unit (7) for correcting the color image data. Additionally, Takiguchi discloses applying a weighting factor to certain areas within an image to achieve smoothness (col. 6, lines 41-65 and col. 7, lines 42-51). The weighting factor and the correction factor are used to generate the correct color. Takiguchi discloses that all of the pixel data of an obtained image is evaluated in order to determine how many pixels fall within the designated color range. In other words, all of the image data is evaluated to determine if it should be added to the designated pixel color region. Therefore, based upon all of said color data, the first skin color count unit (2) of Takiguchi does carry out summing up with respect to a fixed color pixel.

However, as mentioned above, Takiguchi does not disclose performing the calculation of a color adjustment amount regardless of the number of pixels that belong to the region of the reference color. As applicant points out Takiguchi, only performs correction when there is a predefined number of pixels to be corrected. Inoue, on the other hand, discloses that it is well known in the art to correct all of the pixels within a specified hue range. Inoue discloses a specific embodiment in which flesh colors are extracted from an input image and then color corrected. See column 8, lines 22-26 and column 11, lines 4-42. One of ordinary skill in the art at the time the invention was made would have found it obvious to correct all of the pixels within an image so that even if there is not a lot of pixels of the desired hue, the color is corrected no matter what. This would allow for an image that is color corrected for a desired hue, regardless of the number of pixels of the desired hue.

24. As for *claim 15*, Takiguchi discloses that the R, G, and B values are converted to L, u, and v values. The u and v values are used to determine if the hue of a pixel falls within a desired hue range. The u and v values represent a chromaticity of the pixel. The chromaticity is interpreted to be a hue value. See column 3, lines 18-68.

25. With regard to *claim 18*, Takiguchi discloses that depending upon the number of pixels that fall within the desired hue range, correction is either performed or not. Correction is performed if the number of pixels within the hue range exceeds a threshold level. Therefore, based upon the frequencies of the colors that belong to the region of the reference color a color adjustment amount is calculated. See column 3, lines 18-68.

26. Regarding *claim 19*, Takiguchi does disclose that all of the pixel data of an obtained image is evaluated in order to determine how many pixels fall within the designated color range.

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In other words, all of the image data is evaluated to determine if it should be added to the designated pixel color region. Therefore, based upon all of said color data, the first skin color count unit (2) of Takiguchi does carry out summing up with respect to a fixed color pixel.

27. **Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takiguchi (U.S. Patent No. 5,130,935) in view of Inoue (U.S. Patent No. 6,229,580) and further in view of Yamamoto (Japanese Publ. No. 2000236452 A).**

28. Regarding *claim 16*, as mentioned above in the discussion of claim 14, both Takiguchi and Inoue disclose all of the limitations of the parent claim. However, neither of the aforementioned references discloses the use of a histogram to calculate a color correction factor. Yamamoto, on the other hand, discloses that it is well known in the art to use histograms to calculate color correction parameters. Yamamoto discloses a scanner capable of performing color correction. The scanner performs a pre-scanning in which a coarse scan is performed and histograms of the colors are generated. Yamamoto discloses in the abstract that the use of histograms in color correction provides for highly accurate color correction. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to generate histograms so that highly accurate color correction is possible.

29. As for *claim 17*, Takiguchi discloses that RGB values may be used for the color correction process (col. 8, lines 26-27). Yamamoto discloses that only the RGB values of the pixels are added to the histograms. Yamamoto discloses evaluating all of the pixels of the image. However, if only a certain hue of pixel is to be color corrected, it would have been

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obvious to only add those pixels to the histogram since they are the only pixels being color corrected.

30. **Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takiguchi (U.S. Patent No. 5,130,935) in view of Inoue (U.S. Patent No. 6,229,580) and further in view of Kuwata et al. (Japanese Publ. No. 11-146219 A).**

31. Regarding claim 20, as mentioned above in the discussion of claim 14, both Takiguchi and Inoue disclose all of the limitations of the parent claim. However, neither of the aforementioned references discloses the ability to create multiple histograms for each selected reference color. As shown in Figures 10 and 11, Kuwata discloses the ability to select various colors to correct. One of ordinary skill in the art would have found it obvious to select several colors for which to correct as shown in Figures 10 and 11. This feature allows a user to correct for several colors simultaneously. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to correct for several colors at once in Takiguchi so that accurate color reproduction of several colors is achieved. See the abstract and Figures 10 and 11 of Kuwata. A certified translation of the Kuwata reference has been ordered to evaluate how pertinent the reference is to other claims.

Allowable Subject Matter

32. The following is an examiner's statement of reasons for allowance:

Regarding *claim 3*, the primary reason for allowance is that the prior art fails to teach or reasonably suggest that the color adjustment amount correcting means corrects the color

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adjustment amount on the basis of only addition and subtraction operation of the fixed elemental color elements of each pixel.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

33. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any response to this final action should be mailed to:

Box AF
Commissioner of Patents and Trademarks
Washington, D.C. 20231

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or faxed to:

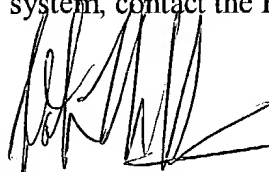
(703) 308-6306, (for formal communications; please mark "**EXPEDITED PROCEDURE**"; for informal or draft communications, please label "**PROPOSED**" or "**DRAFT**")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).


Any inquiry concerning this communication or earlier communications from the examiner should be directed to John M. Villecco whose telephone number is (703) 305-1460. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on (703) 305-4929. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



John M. Villecco
October 18, 2004



WENDY R. GARBER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600